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53. (New) A method of claim 38 wherein the genetic data is cross-related to the phenotypic data.

54. (New) A method of claim 39 wherein the genetic data is cross-related to the phenotypic data.

55. (New) A method of claim 40 wherein the genetic data is cross-related to the phenotypic data.

#### REMARKS

Reconsideration of the above application is respectfully requested.

By this amendment the Applicant has cancelled Claims 1-25 without prejudice. Accordingly the Office Action of April 25, 2001 with regard to those claims now appears moot.

New claims 26-55 are submitted for examination.

In the veterinary diagnostic field, at least for general companion animals, namely non-livestock animals, there has never been disclosed, taught or suggested a protocol for combining genotype data and phenotype health assessment data together by computer in the manner now claimed so as to improve the life quality and veterinary care of such animals.

The invention of Claims 26-55 is directed to a veterinary diagnostic method of health profiling a non-livestock animal by obtaining the genetic data of the animal and a phenotype health assessment of the animal. There is the step of combining, through a computer program, the genetic data and the phenotype health assessment data for purposes of determining a relationship. The genetic data relates to at least one of genetic mapping, genetic background, and genetic screening of the animal(s).

An analysis is produced which relates to the evaluation of the health, disease or disorder probabilities and longevity of the animal and will be used thereby to enhance the quality of life or extend the lifespan of the selected animal. The selected animal is at least one of a selected

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animal family, selected animal breed, selected animal grouping, or selected animal species. This feature is set out in claims 26 and 27.

As defined in claims 26, 27, 38 and 39 there is a combination of this genetic data and phenotype data through the use of a computer. As a result, there is obtained this enhanced analysis which is significantly different from anything previously obtainable.

Claim 34 relates more specifically to a veterinary diagnostic method relating to the characteristic of autoimmune thyroiditis or thyroid dysfunction in a selected animal. There are steps of analyzing biological data, through a computer program, such biological data relating to phenotypic health assessment of the selected animal in combination with the genetic data of the selected animal. An analysis is produced from these data. Once again, this combination report is a significant change from any form of veterinary diagnostic method previously known.

In claims 38, 39 and 40 the analysis is directed to an evaluation of a relationship between the evaluation of the health, disease or disorder probabilities and nutrition of the animal.

Claim 38 is fashioned after claim 26, but relates to the evaluation of the health, disease or disorder probabilities and nutrition of the animal.

Claim 39 is similarly fashioned after claim 27 but relates to the evaluation of the health, disease or disorder probabilities and nutrition of the animal.

Claim 40 is similarly fashioned after claim 34 but relates to the evaluation of the health, disease or disorder probabilities and nutrition of the animal.

In dependent claims 42- 46 there is the requirement of using the combination of data to create a computer driven statistical model for prediction of health, disease or disorder and quality of life and the lifespan of the animal.

Dependent claims 28, 29, 32, 36, 37 and 47 -49 include a communication protocol with the methods of the independent claims.

Dependent claims 50-55 relate to creating genetic data which is cross-related to the phenotypic data.

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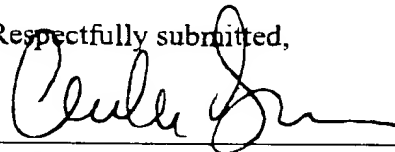
It is submitted that this new technology and methodology of veterinary diagnosis will significantly revolutionize the field of veterinary diagnosis, and for instance, the diet and food supplements that may influence the nutritional state in relation to animal health.

Claims 26-55 meet the overall requirements raised in the prior restriction and selection of species rejection.

It is submitted that this application is now in good order for allowance, and such early action is respectfully solicited. Should matters remain which the Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone the Applicant's undersigned attorney.

Please charge any additional fees or credit overpayment to Deposit Account No. 16-2230.

Respectfully submitted,



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Date: May 21, 2001

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## ADDENDUM PAGES

VERSION MARKED TO REFLECT CHANGES

26. (New) A veterinary diagnostic method of health profiling a selected subject animal to enhance the quality of life or extend the lifespan of the selected animal, the animal being non-livestock, comprising:

a) obtaining the

i) genetic data of the selected animal, the genetic data including at least one of the data relating to genetic mapping, genetic background, or genetic screening related to the selected animal; and

ii) phenotype health assessment data of the selected animal;

b) using a computer program, combining the genetic data and the phenotype health assessment data to determine a relationship between the genetic data and the phenotype health assessment data;

c) selecting from b) at least one of:

i) the data relating to the temperament of the selected animal;

ii) the data relating to the lifespan of the selected animal; or

iii) a physiologic or genetic marker for autoimmune thyroiditis or thyroid dysfunction of the selected animal; and

d) analyzing the selection of the data of c), the analysis including an evaluation of health, disease or disorder probabilities to thereby enhance the quality of life or extend the lifespan of the selected animal, the selected animal being at least one of a selected animal family, selected animal breed, selected animal grouping, or selected animal species.

27. (New) A method of creating a computer database for facilitating a veterinary diagnostic determination of a health profile of an animal, the animal being non-livestock, comprising:

a) obtaining the

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- i) genetic data of the selected animal, the genetic data including at least one of the data relating to genetic mapping, genetic background, or genetic screening related to the selected animal; and
- ii) phenotype health assessment data of the selected animal;
- b) using a computer program for combining the genetic data and the phenotype health assessment data to determine a relationship between the genetic data and the phenotype health assessment data;
- c) selecting from b) at least one of:
  - i) the data relating to the temperament of the selected animal;
  - ii) the data relating to the lifespan of the selected animal; or
  - iii) a physiologic or genetic marker for autoimmune thyroiditis or thyroid dysfunction of the selected animal; and
- d) providing for an analysis of the data of c), the analysis including an evaluation of health, disease or disorder probabilities to thereby enhance the quality of life or extend the lifespan of the selected animal, the selected animal being at least one of a selected animal family, selected animal breed, selected animal grouping, or selected animal species .

28. (New) The method of claim 27, including permitting communication of an access request message from a remote user via a communications link, and the communications link being a computer network, including the Internet, the access request being for obtaining a report of the analysis from a central database processing resource.

29. (New) The method of claim 26, including the steps of communicating between a remote user and a central database processing resource through a computer network, including the Internet, and providing a report of the analysis to the remote user after charging for such report.

30. (New) A method of claim 26 comprising the step of analyzing biological laboratory test data from a bodily fluid or a tissue of the selected animal, such test data being related to a neurotransmitter activity of the animal.

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31. (New) The method of claim 30, including obtaining data related to at least one of the value of serotonin, the gamma-aminobutyric acid (GABA), the glutamate, the dopamine, the glycine, the aspartate, the acetylcholine, the norepinephrine, the histamine, the substance P, the vasopressin, the vasoactive intestinal peptide, the neurotensin, or the other neuropeptides of the animal.

32. (New) The method of claim 30, comprising the step of storing the report in a central database processing resource, including permitting a remote user to access the central database processing resource via a communications link, the communications link being a computer network including the Internet, the access being for obtaining a report from the central database processing resource, the report including the health profile of that animal.

33. (New) The method of claim 26 including obtaining additionally at least one of :

- iv) the neurotransmitter data relating to the temperament of the animal;
- v) the neurotransmitter data relating to the longevity of the animal;
- vi) data assessing the bodily fluid and tissue immune stimulation reaction, neoplastic or paraneoplastic change, or cellular inflammatory response of the animal;
- vii) metabolic marker of the animal for inherited organ dysfunction or dysplasia;
- viii) data assessing the presence of or susceptibility to mammary cancer of the animal;
- ix) data assessing the integrity of immune surveillance mechanisms of the animal; or
- x) data assessing the risk of inherited bleeding disease or disorder of the animal.

34. (New) A veterinary diagnostic method of health profiling a selected animal, the animal being non-livestock, to determine characteristics related to autoimmune thyroiditis or

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thyroid dysfunction of the selected animal to thereby enhance the quality of life or extend the lifespan of the selected animal comprising the steps of:

a) analyzing biological laboratory test data from a bodily fluid or tissue of a selected animal, such test data being related to a physiologic or genetic marker for thyroiditis or thyroid dysfunction in the animal;

b) analyzing, through a computer program, biological test data relating to a phenotypic health assessment of the selected animal in combination with genetic data related to that animal, the genetic data including at least one of the data relating to genetic mapping, genetic background, or genetic screening related to the animal thereby to obtain a relationship of the phenotypic health assessment data and genetic data; and

c) developing an analysis based on the relationship of the data of a) and b), the analysis including an evaluation of the thyroiditis or thyroid dysfunction condition of the selected animal, the selected animal being at least one of a selected animal family, selected animal breed, selected animal grouping, or selected animal species.

35. (New) The method of claim 34, including obtaining data related to at least one of the value of a comprehensive thyroid autoantibody test profile, DNA fingerprint (the gene map), and markers for immunoglobulin receptors on B-cells, T-cell receptors, and protein products of the major histocompatibility complex (MHC) genes (Class I and II allelic HLA, DLA or equivalent antigenic specificities) of the animal.

36. (New) The method of claim 34, including reporting the analysis of the animal to a remote party through a communications network, selectively including the Internet .

37. (New) The method of claim 28, including the steps of communicating between the remote user and the central database processing resource through the computer network, including the Internet, and providing the report to the remote user after charging for such report.

38. (New) A veterinary diagnostic method of health profiling a selected subject animal to enhance the quality of life or extend the lifespan of the selected animal, the animal being non-livestock, comprising:

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- a) obtaining the
  - i) genetic data of the selected animal, the genetic data including at least one of the data relating to genetic mapping, genetic background, or genetic screening related to the selected animal; and
  - ii) phenotype health assessment data of the selected animal;
- b) using a computer program, combining the genetic data and the phenotype health assessment data to determine a relationship between the genetic data and the phenotype health assessment data;
- c) selecting from b) at least one of:
  - i) the data relating to the temperament of the selected animal;
  - ii) the data relating to the lifespan of the selected animal; or
  - iii) a physiologic or genetic marker for autoimmune thyroiditis or thyroid dysfunction of the selected animal; and
- d) analyzing the selection of the data of c), the analysis including an evaluation of health, disease or disorder probabilities and the nutrition of the selected animal, the selected animal being at least one of a selected animal family, selected animal breed, selected animal grouping, or selected animal species .

39. (New) A method of creating a computer database for facilitating a veterinary diagnostic determination of a health profile of an animal, the animal being non-livestock, comprising:

- a) obtaining the
  - i) genetic data of the selected animal, the genetic data including at least one of the data relating to genetic mapping, genetic background, or genetic screening related to the selected animal; and
  - ii) phenotype health assessment data of the selected animal;
- b) using a computer program for combining the genetic data and the phenotype health assessment data to determine a relationship between the genetic data and the phenotype health assessment data;
- c) selecting from b) at least one of:

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- i) the data relating to the temperament of the selected animal;
  - ii) the data relating to the lifespan of the selected animal; or
  - iii) a physiologic or genetic marker for autoimmune thyroiditis or thyroid dysfunction of the selected animal; and
- d) providing for an analysis of the data of c), the analysis including an evaluation of health, disease or disorder probabilities and the nutrition of the selected animal, the selected animal being at least one of a selected animal family, selected animal breed, selected animal grouping, or selected animal species .

40. (New) A veterinary diagnostic method of health profiling a selected animal, the animal being non-livestock, to determine characteristics related to autoimmune thyroiditis or thyroid dysfunction of the selected animal to thereby enhance the quality of life or extend the lifespan of the selected animal comprising the steps of:

- a) analyzing biological laboratory test data from a bodily fluid or tissue of a selected animal, such test data being related to a physiologic or genetic marker for thyroiditis or thyroid dysfunction in the animal;
- b) analyzing, through a computer program, biological test data relating to a phenotypic health assessment of the selected animal in combination with genetic data related to that animal, the genetic data including at least one of the data relating to genetic mapping, genetic background, or genetic screening related to the animal thereby to obtain a relationship of the phenotypic health assessment data and genetic data;
- c) developing a analysis based on the correlation of the data of a) and b), the analysis including an evaluation of the thyroiditis or thyroid dysfunction condition of the selected animal, the selected animal being at least one of a selected animal family, selected animal breed, selected animal grouping, or selected animal species; and
- d) determining a relationship from the analysis between health, disease or disorder probabilities and the nutrition of the selected animal.

41. (New) A method as claimed in claim 26 including using the combination of data to create a computer driven statistical model for predicting the occurrence of disease, quality of life or a lifespan of an animal. disease, quality of life and the lifespan of the animal.

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42. (New) A method as claimed in claim 27 including using the combination of data to create a computer driven statistical model for predicting the occurrence of disease, quality of life or a lifespan of an animal.

43. (New) A method as claimed in claim 34 including using the combination of data to create a computer driven statistical model for predicting the occurrence of disease, quality of life or a lifespan of an animal.

44. (New) A method as claimed in claim 38 including using the combination of data to create a computer driven statistical model for predicting the occurrence of disease, quality of life or a lifespan of an animal and the nutrition of the animal.

45. (New) A method as claimed in claim 39 including using the combination of data to create a computer driven statistical model for predicting the occurrence of disease, quality of life or a lifespan of an animal and the nutrition of the animal.

46. (New) A method as claimed in claim 40 including using the combination of data to create a computer driven statistical model for predicting the occurrence of disease, quality of life or a lifespan of an animal and the nutrition of the animal.

47. (New) The method of claim 38, including permitting communication of an access request message from a remote user via a communications link, and the communications link being a computer network, including the Internet, the access request being for obtaining a report of the analysis.

48. (New) The method of claim 39, including permitting communication of an access request message from a remote user via a communications link, and the communications link being a computer network, including the Internet, the access request being for obtaining a report of the analysis from a central database processing resource.

49. (New) The method of claim 40, including permitting communication of an access request message from a remote user via a communications link, and the communications link being a computer network, including the Internet, the access request being for obtaining a report of the analysis.

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50. (New) A method as claimed in claim 26 wherein the genetic data is cross-related to the phenotypic data.

51. (New) A method as claimed in claim 27 wherein the genetic data is cross-related to the phenotypic data.

52. (New) A method as claimed in claim 34 wherein the genetic data is cross-related to the phenotypic data.

53. (New) A method of claim 38 wherein the genetic data is cross-related to the phenotypic data.

54. (New) A method of claim 39 wherein the genetic data is cross-related to the phenotypic data.

55. (New) A method of claim 40 wherein the genetic data is cross-related to the phenotypic data.

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